Reading file

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105

March 1, 1993

Dave Davis
Bureau of Land Management
Battle Mountain District Office
P.O. Box 1420
Battle Mountain, NV 89820

Dear Mr. Davis:

The U.S. Environmental Protection Agency (EPA) has reviewed the **Cortez Gold Mine Expansion Project Draft Environmental Impact Statement (DEIS), Lander and Eureka Counties, Nevada.** Our comments on this DEIS are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality's NEPA Implementation Regulations (40 CFR Parts 1500-1508), and EPA's authorities under §309 of the Clean Air Act.

The DEIS evaluates a proposal to expand the Cortez Gold Mine, which would include expanding an existing open-pit mine and waste rock dumps; constructing new heap leach facilities, tailings disposal facilities, and waste rock dumps; and continuing exploration drilling. Approximately 428 acres would be affected by the proposed project.

We have rated this DEIS as EO-2 -- Environmental Objections-Insufficient Information. Our rating is based on the project's potential impacts to water quality and biological resources, as well as the need for additional information in the Final Environmental Impact Statement (FEIS) regarding the proposed project's potential impacts to water quality, vegetation, and wildlife as well as facility design, monitoring, and reclamation.

We do not believe that the DEIS sufficiently analyzes the proposed project's potential to generate acid mine drainage. Therefore, questions remain regarding the appropriateness of facilities designs and reclamation. The FEIS should address in greater detail the potential for generation of acid rock drainage from the project sites, as well as measures to prevent and/or control such drainage and the potential impacts of a release of acid drainage to the environment.

We appreciate the opportunity to review this DEIS. Please send a copy of the FEIS to this office at the same time it is

officially filed with our Washington, D.C., office. If you have any questions, please call me at (415) 744-1015 or Jeanne Dunn Geselbracht, Office of Federal Activities, at (415) 744-1576.

Sincerely,

Jacqueline Dyland

for Deanna M. Wieman, Director
Office of External Affairs

Enclosures

000477/92-459

cc: Dick Reavis, NDEP
Tom Fronapfel, NDEP
Mary Jo Elpers, U.S. Fish & Wildlife Service

Water Quality

EPA is greatly concerned about the impacts of acid rock drainage to surface water and groundwater at mine sites throughout the United States. Acidic drainage generated at mines results not only in the release of low pH waters but in mobilization of metals and other pollutants as well. Acid drainage may take many years or decades to initially appear depending on several factors including geochemistry of the waste rock and tailings, saturation of the waste rock and tailings, rate of precipitation, and hydrogeology of the area. It is extremely important to accurately predict, prevent, and control acid mine drainage in order to preserve environmental resources such as water quality and healthy vegetation and aquatic biota. We encourage BLM to work with the project proponent to develop conservative facilities designs and monitoring plans. We believe that these early measures are cost-effective and prudent considering the environmental and economic costs of corrective action measures later.

According to the DEIS, waste rock in the waste rock dumps is not expected to produce acid in amounts exceeding the neutralizing potential of the waste rock. This prediction is based on the lack of evidence of acid generation in any of the existing waste rock dumps in the areas of proposed mining. The FEIS should indicate the age of the waste rock dumps in these areas as well as discuss in greater detail the geology of the proposed project sites. The FEIS should discuss the tests that were performed to determine acid potential/neutralization potential of the waste rock and include the results of those tests.

The FEIS should discuss the acid generating potential of the tailings and the leach heaps and include the test results. Neutralizing minerals in waste rock, tailings, and ore may be present in sufficient quantities to prevent acid generation for years before pH begins to decrease relatively rapidly. Waters in contact with historic pits and tailings which have been exposed for several decades can be good indicators of acid potential. The FEIS should provide water quality data for these older facilities at the Cortez and Gold Acres sites and discuss their relevance as indicators of potential acid generation at the proposed expansion sites. The FEIS should also discuss the specific potential impacts of acid rock drainage to all environmental resources.

If the tailings would be acid generating, we recommend the addition of sufficient limestone admixed in the mill feed as a

buffer to minimize pyrite oxidation of tailings and subsequent acid generation.

The FEIS should discuss whether Tailings Pond No. 6 is lined. If it is not, we recommend that the pond not be used for tailings disposal under the proposed project in light of existing contamination resulting from unlined tailings ponds.

The FEIS should discuss the design parameters of Tailings Pond No. 7, the proposed heap leach facilities, and ditches and overflow ponds including thickness and permeability of the liners.

The FEIS should describe the leak detection system and groundwater monitoring well network. We recommend that the monitoring plan include both groundwater and vadose zone monitoring (e.g., suction lysimeters) beneath Tailings Pond No. 7, leach pads, and waste rock dumps.

The DEIS states that concentrations of weak acid dissociable (WAD) cyanide in the proposed tailings impoundment would be maintained below the level toxic to wildlife (p. 2-20). Elsewhere, the DEIS implies that the older heap leach solution ponds and ditches are not netted or covered for wildlife protection because the concentration of WAD cyanide is less than 10 parts per million (ppm) (pp. 2-7 and 2-8). The FEIS should discuss whether this threshold is relevant in determining whether ponds should be netted and indicate if these ponds will continue to operate under the proposed alternative. If so, we recommend that all solution ponds and ditches that could potentially be hazardous to wildlife be netted or covered.

The DEIS states that in the event of a cyanide spill, soils with total cyanide concentrations exceeding 10 mg/kg would be excavated. The FEIS should discuss the source of the 10 mg/kg action level as well as the health risks associated with it and the projected fate and transport or degradation of cyanide at this concentration in soil that is not exposed to air or sunlight.

The monitoring plan should be provided in the FEIS and include the action levels and contingency measures that would be taken should action levels be exceeded in surface water, groundwater, or soils.

The DEIS does not indicate whether any of the intermittent streams and washes on the project site are waters of the U.S. The FEIS should identify and describe all waters of the U.S. that could be affected by the proposed project. A map depicting these

waters should be provided. The FEIS should also discuss whether any of the proposed activities would require a Clean Water Act §404 permit from the U.S. Army Corps of Engineers. If so, the FEIS should discuss whether the proposed project would comply with the Federal Guidelines for Specification for Disposal Sites of Dredged or Fill Materials (40 CFR 230), promulgated pursuant to Clean Water Act §404(b)(1).

The §404(b)(1) Guidelines require that the project:

♦ be the practicable alternative which would have the least adverse impact on the aquatic ecosystem [40 CFR 230.10(a)];

♦ not violate State water quality standards or jeopardize any federally-listed threatened or endangered species [40 CFR 230.10(b)];

♦ not cause or contribute to significant degradation of waters of the U.S., including wetlands [40 CFR 230.10(c)];

♦ include all appropriate and practicable steps to minimize adverse impacts on the aquatic ecosystem (i.e., mitigation) [40 CFR 230.10(d)].

The FEIS should include a map **clearly** depicting the extent of groundwater contamination at the project sites with respect to existing and proposed facilities, the locations of the pollution control wells, and the potentiometric surface. The FEIS should also describe the treatment and fate of the pumped water from pollution control wells.

The DEIS provides existing water quality data for the project sites. The FEIS should include a table indicating water quality standards for reference.

The significance criteria for surface water and groundwater (DEIS, pp. 4-14 and 4-15) should include exceedence of any water quality standard.

Closure and Reclamation

The DEIS states that Cortez is working with BLM and the Nevada Division of Environmental Protection to prepare a detailed reclamation plan and bond estimation for the post-January 1, 1981, disturbance at the project sites. The FEIS should explain how and by whom pre-January 1, 1981, disturbances will be reclaimed.

The DEIS indicates that the objective of reclaiming the tailings pond would be to eliminate any continued direct contact with solutions containing potentially harmful amounts of cyanide, preventing release of fugitive tailings dust, and providing a land use in concert with the stated post-mining land use objectives. Reclamation should also be conducted in such a manner as to ensure prevention of acid rock drainage, not only from tailings ponds but from waste rock dumps and heap leach facilities as well. For example, measures to keep runon and runoff away from contact with tailings, waste rock, and leach heaps (such as impermeable covers and runon/runoff channels) should be seriously considered.

The FEIS should include contingency plans in the event that acid drainage is generated from waste rock piles, tailings ponds, or leach pads after reclamation has been completed. The FEIS should also indicate who would be responsible for maintaining systems that collect and treat such drainage.

The DEIS states that maintenance of erosion control and sediment control facilities as required would be conducted until the reclamation of the leach facility was considered to be complete (p. 2-27). Cortez Gold Mines should be required to continue any ongoing mitigation or cleanup for as long as necessary, even after closure of the site and release of bonds. The FEIS should indicate who will be required to ensure post-closure maintenance of covers for tailings, waste rock dumps, and leach heaps as well as runon/runoff protection berms and diversion structures.

The FEIS should discuss the design of the covers for the tailings piles, waste rock dumps, and heap leach facilities to preclude meteoric water from generating acid rock drainage. The discussion should include their permeability and anticipated effectiveness. We recommend that monitoring of seepage from tailings, leach heaps, and waste rock piles be required indefinitely after closure.

Adverse impacts to surface water or groundwater quality may not become apparent until years after mine operations cease. The FEIS should discuss the provisions that will be made in the Plan of Operation to ensure adequate financial resources to implement corrective action and/or mitigation measures that may be necessary years after mine closure.

On page 4-13 of the DEIS, it is stated that because "there would be a minor to moderate shortfall in topsoil available from salvaging, about 25 acres of slopes would not be topsoiled and revegetation on these sites might not stabilize the slope." Elsewhere in the DEIS (p. 2-34), it is stated that topsoil would

only be available in sufficient quantity to cover 67 percent of the disturbed area. The FEIS should clarify this discrepancy and identify the material that would be used to cover the remaining one-third of the disturbed area to provide a substrate for vegetative growth and how it would be expected to affect the success of revegetation. EPA urges BLM to require reclamation and reestablishment of vegetation on all disturbed acres on the project sites.

The FEIS should discuss the criteria that would be used to determine the success of revegetation efforts and contingency measures should the original revegetation efforts fail.

According to the DEIS, if reclamation is not successful, substitute topsoil materials could be obtained from Cortez reasonably foreseeable projects (p. 4-14). However, pursuant to the Council on Environmental Quality's NEPA Implementation Regulations at 40 CFR §1506.1, no action on a project shall be taken until the Record of Decision for that project is issued. Therefore, topsoil from a future project site could not be made available until BLM completes the NEPA process and issues a Record of Decision for that future project.

Figures 2.2-2 and 2.2-3 do not clearly depict Tailings Ponds No. 6 and No. 7, and it is unclear whether Tailings Pond No. 6 is included in these reclamation areas. The FEIS should include a map that clearly depicts these ponds and clarify that Tailings Pond No. 6 would be reclaimed upon completion of its use.

Biological Resources

The FEIS should discuss how revegetation would be accomplished on sites that are covered with impermeable caps, the necessary thickness of the topsoil, and how vegetation would be maintained so as not to allow growth of species with relatively deep roots that would cause cracks in the cap. We note that Bitterbrush (Purshia tridentata) is included in the seed mixture proposed for revegetation. The FEIS should include an analysis of the impacts that such a shrub would have on the effectiveness of an impermeable cap. In addition, the FEIS should discuss whether a soil thickness greater than one foot would be necessary to preclude cracking of the cap.

Destruction of dense sagebrush/rabbitbrush habitat at the proposed project site could eliminate a local population of pygmy rabbit, a Candidate 2 species. We note that rabbitbrush is not included in the seed mixture for proposed vegetation reclamation. The FEIS should indicate the number of acres of pygmy rabbit habitat that would be disturbed and discuss whether rabbitbrush

is expected to naturally reestablish in reclaimed areas, how long such reestablishment would take, and whether rabbitbrush roots would cause cracking of the cap. The FEIS and Record of Decision should commit to full mitigation for disturbance/destruction of this habitat. Based on past experience, full restoration of habitat is extremely difficult on arid reclaimed mine sites. Indeed, the DEIS states that after reclamation "the resulting vegetative communities and wildlife habitat are likely to be different from the original communities for the long term" (p. 4-44). If full restoration is unlikely, or if reestablishment of dense sagebrush/rabbitbrush is undesirable in light of the need to maintain cap integrity, the FEIS and Record of Decision should commit to full replacement of this habitat.

EPA encourages BLM to revegetate disturbed areas with appropriate native plants in an effort to reestablish the biological diversity of the original vegetative communities on the project site.